Traps Baited with Orphan

OR

What is the Matter with Life Insurance?

Elizur Wright

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TRAPS

BAITED WITH ORPHAN;

OR,

What is the Matter with Life Insurance?

BY

ELIZUR WRIGHT,

EX INSURANCE COMMISSIONER.

BOSTON:

JAMES R. OSGOOD AND COMPANY,

(Late Ticknor & Fields, and Fields, Osgood, & Co.)

1878.

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1877.

FRANKLIN PRESS:
RAND, AVERY, AND COMPANY,
BOSTON.

PREFACE.

WHY AND WHEREFORE?

THE possible orphan is worthy of great respect. The young child of a dead father who has left no provision for his nurture is a forlorn being, who had, perhaps, better not have been. It becomes every father to provide, cost what it may, that his child shall not be such an orphan. Die he must; and die he may before he has accumulated the wherewith to educate his child. But this is no reason why the idea of the possible orphan should be used to bait a trap: it is, however, the reason why thousands of fathers have gone into one. It is the defect, if not the disgrace, of our civilization, that it has not before this found out a better way to provide for the

orphan than going into a trap, — a trap in which a father may find himself a prisoner after his children are grown up, and he has himself again become a child.

Our system of providing for the orphan, if not broken down, has fallen into disrepute. People wonder what is the matter with it. They see shocking dishonesty, and begin to believe nobody can be trusted. But somebody must be trusted. Men are as trustworthy as they ever were. The fault is not so much in the men as the system. It leads into temptation. It would corrupt angels. It seems, in some respects, specially contrived for the propagation of rogues and enormous leeches. It is essentially a man-trap, baited with an idea that irresistibly attracts the noblest men.

Having been extensively used as a sort of stool-pigeon in years gone by, when my attention was more directed to the value of the bait than to the inconveniences of the trap, it is a penitential labor with me to let the public know what, in my judgment, the matter is with life-insurance. The following chapters were prepared chiefly for newspapers; and most of them have appeared, in

substance, in a Western daily. They are now published in the present form, not to increase panic, but to allay it. The case is by no means so bad as it seems. Considering the badness of the system, there has been more honest and excellent management than could have been expected. The accumulations in many companies are ample, and well invested. If the policy-holders only understood their rights, and would act in concert for their own interests, the errors and defects of the present system would be corrected without cataclysm.

ELIZUR WRIGHT.

BOSTON, July, 1877.

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Traps Baited with Orphan.

I.

ON THE SURFACE, AND UNDER.

There are in this country more than half a million families who have voluntarily subjected themselves to a tax, amounting, in the aggregate, to about $100,000,000 a year, and are under bonds, more or less, in the aggregate amount of about $400,000,000, to continue to pay this tax for life, or a long period. The objective point is a provision for the widow and orphan, in case the male head of the family is removed by death. The actual result is the distribution of about $25,000,000 annually to widows and orphans, not to speak of considerable sums distributed as

endowments to the living. Such is life-insurance at a glance, — a thing which has grown upon the country like a prodigious dream, having palaces, powers, and potentates of its own, with incomes that little kings might envy. There may be fifty or sixty companies; but more than half of the business is done by five, and one engrosses one-fifth of the whole.

Of the tens of thousands subject to this remarkable tax, probably not one out of a thousand understands why it is what it is. Surely, if all had understood the reasons for it at the start, not one in a thousand would have subjected himself to it, without other conditions in the policy. The business involves a game of chance, expressly excepted by law from the prohibition against gambling, on account of its meritorious object. It might be as thoroughly understood by all interested in it as the rule of three, or the extraction of the square root, if the school arithmetic contained a Mortality Table, and explained its application to a life-insurance policy. And provided the game is understood on both sides, fairly played, and no risk run, except what is

necessary to secure the desired indemnity, human science has never devised a more admirable plan for securing at the same time the benefit of association and the independence of the individual. But science has never been allowed to take the responsibility of running the business. It has always been in the hands of "business-men," so called, who merely employ scientific men to calculate chances and premiums under various conditions, clothing in quite outlandish algebra all their processes, and leaving things mixed which ought to be separate.

If the life-insurance policy provided fairly for every contingency, and was made, not only safe for the company, but just to the individual insured, there would be no greater probability of mismanagement or extravagance in a life-insurance company than in a savings-bank. As things are mixed in the policy which ought to be kept separate, and as the knowledge of what is going on under it from year to year is necessarily almost wholly on one side, if anywhere, the facility for swindling in life-insurance is so great, that the wonder is that it should ever be conducted with any degree of honesty.

What a policy-holder sees in his policy is, that the company agrees to pay his heirs $10,000, I will say, whenever he dies; and he agrees to pay the company yearly, in advance, say $300; in default of which the policy will be void, and no money returned. The man almost infallibly makes the mistake of supposing that the company insures him $10,000 as long as he lives. It does no such thing. It insures, perhaps, $9,900 the first year, and less and less every year afterwards, as long as the policy lasts. When the policy is twenty-eight years old, the company will not be insuring quite $5,000. All this is concealed from the policy-holder by lumping the premium of $300, which really consists of three distinct parts, each of which is as easily calculable for every policy-year as the whole is, and each of which has its distinct function. First, there is the margin for expenses and *extra mortality*, say $100, which is constant every year; second, the tabular cost of insuring the $9,900 which the company insures the first year, which, not to be nice, I will say is $100; third, the remaining $100 is money which is not needed to pay either expenses or risk during that

year, or any succeeding one. It simply diminishes the company's risk from $10,000 to $9,900. I choose to call it a *self-insurance* deposit. For many years, a certain easily calculable portion of the premium must be thus deposited, and the self-insurance fund must also increase by a certain interest. When the deposit ceases entirely, the self-insurance fund must still increase by interest, though a part of its interest must be used to aid the premium in paying for the risk then borne by the company. Thus the self-insurance fund, which was $100 the first year, will be over $5,000 the twenty-eighth year, and $10,000 if the party should live to the limit of the Mortality Table.

What the terms of the policy imply is, that the company engages to stand a decreasing series of insurances, from $9,900 to $0, and to hold in trust a complementary self-insurance fund, or deposit, increasing from $100 to $10,000, returnable *only* on the death of the insured. The first two parts of the premium in the early years of the policy, and the whole, together with a part of the interest in the later, are more than sufficient to pay for the limited insurance which the company does, including incidental expenses.

Thus it will be seen that the self-insurance fund is an absolute and determinable sum in trust, which has no function whatever but to diminish the risk assumed by the company. It is prescribed by law in many States, and is a mathematical necessity as well. Of course it is the property of the insured, because it can be used for no other claim than his. Its absolute necessity may be seen from this, that to insure in the twenty-eighth year of the policy as much as was insured in the first year would cost a little more than $500, whereas the premium is only $300. But, since the self-insurance fund is over $5,000, the company has now to insure a little less than $5,000; so that the premium, with a little help from interest, will be sufficient.

But the astounding defect of the policy is, that it makes no provision, or, if any, no just one, for any contingency but death. If, at the end of the twenty-eighth year, the party ceases to need more insurance, or is unable to pay for it, he finds himself under a $5,000 bond to go on. Even the Massachusetts Non-forfeiture Law will mulct him $1,000, and only oblige the company to give him

something less than $4,000 worth of further insurance. In short, he now finds himself in a trap, — a trap which is every year becoming more and more discreditable to the age in which we live.

II.

THE EXCUSE.

THE excuse for the trap, or ever-increasing surrender charge, is twofold. First, its age,—it has been practised for a century or more; second, without it there would be nothing to hold the company together. The healthy members might retire, and leave the sickly to break the company by dying too fast.

Age does not sanctify abuses: so I shall say nothing of the first excuse. The second is good to a limited extent. If an individual has bound a company to insure him for life, or a number of years, for a certain annual premium, he cannot expect to be released from his obligation under the contract to go on making the payments, well or sick, unless the company consents to it. The company would probably consent to it willingly, should he be taken dangerously sick. It would

be sure not to do so if his health was as good as when he entered. It could not at the start agree to do so, without an adequate consideration. The ability of the company to perform its promises depends on its having a considerable number of members, and maintaining their average vitality. It must, therefore, charge every member retiring in good health enough to pay for the increased risk it runs on those that remain, or to get a new member as good. How the amount of this charge can be ascertained with reasonable certainty, I shall endeavor to explain by and by. One thing may be said with certainty, before I go further. As health is the condition of issuing a policy, no life can be supposed to be growing healthier as it grows older. Consequently, the charge for release cannot justly be larger at the end of any year than at the end of the first. Other things being equal, the lapse of a new policy of the ordinary kind will be more damaging to the company than the lapse of an older one. For more than a century, the companies have violated this almost self-evident equity.

The absolute necessity of a certain forfeiture or surrender charge to secure the persistence of the payments justifies neither an excessive charge, nor the inequity of making it too small on some policies, and too large on others. The practice of the companies transcends the reasons for it, and rides rough-shod over the old Latin law maxim, *Est modus in rebus* ("Every thing has its limits"), and the pithy French proverb, *Rien de trop* ("Nothing too much").

And it is not only in this trap, into which the policy-holder goes deeper and deeper every year, that these time-honored expressions of common sense are trampled on. The ordinary policy covers the *whole term of life.* It is only the active portion of life that is really insurable. A human being is no more likely to need insurance, or to have anybody suffer pecuniary loss, by the discontinuance of his life in his second childhood than in his first; perhaps not so much so. Insuring for the *whole life* is too much, and especially so if the surrender charge is to increase with the years of the policy.

No company, I believe, issues a policy to a

person over 75 : for a still better reason, it ought never to issue one to extend beyond that age. The annual premium for a policy payable to the party himself at the age of 75, or to his heirs on previous death, if taken before middle life, but little exceeds that of an ordinary whole-life policy. On such a policy any equitable charge for surrender will decrease from the start.

Another thing I am now prepared to say positively, though it is a thing the companies are particularly loath to admit. The *maximum* surrender charge, and the *minimum* cash surrender value, to be paid on the retirement of the policy-holder at the end of any policy-year, can be as safely stipulated in the policy as the sum insured in case of death. It is undeniable, and will not be denied, that the endowment insurance policies, which at present make about one-fifth of the business, are as safe to the companies as any others, if not safer; and yet in these policies a cash surrender value is absolutely stipulated for the last year of the term. It will sorely puzzle anybody, mathematician or business-man, to give any reason why, if the company can safely do

this, it cannot absolutely stipulate a cash surrender value to be paid, if the insured elects to receive it, at the end of any previous year of the term.

The companies claim, with some reason, that if they were now to pay cash surrender values, on the principle of returning the net value, or unearned premium, less a charge never greater than the net value of the policy at the end of the first year, there would be an outward rush that would disturb the value of their investments. That is probably true to some extent; for thousands of old policy-holders may have had no motive to keep up their insurance for some years past, but have been prevented from surrendering by the exorbitant charges. If the charges should be cut down to equity, so many might apply for cash surrender values at once as to embarrass companies whose investments are not of the most convertible sort. But, whatever strength this argument has as to existing policies, it has none whatever as to future ones; and it has not much, anyway, when we consider that it is the disgust of old policy-holders who have surren-

dered, or wish to surrender, which, more than any thing else, makes it so difficult now to get new ones to enter; also that no one is likely to apply for a surrender except at the anniversary of his policy, when a new premium becomes due; so that the run on the company would be spread pretty equally over a whole year. And, besides that, many would not be in so great a hurry to get out, if they knew that the surrender charge was growing less every year, instead of knowing, as they do now, that it is rapidly growing greater every year.

The chief argument brought against stipulating in every future policy the exact cash surrender value which will be paid at the close of any policy-year in which a member may elect to withdraw, is, that the company cannot afford to allow, or rather to sell to the policy-holder in advance, the right of selection against it. The utter fallacy and nonsense of this argument cannot be shown to the best advantage without figures. It will suffice to say now, however, that sauce for goose will commonly do for gander, and that one individual, in selecting himself out of a company,

will have no great advantage over it, with the best medical advice, in selecting from offered risks those it will admit. Practically, it has been a moot point with life-underwriters hitherto, in view of a vast deal of outgoing, whether the outgoers average any higher vitality than the instayers. Of course, we can have the exact statistics only of the latter; but they are by no means alarming. The lapses from the largest company have been about as numerous as the remaining members, and have forfeited, or been charged on surrender, sums which aggregate latterly nearly a million dollars a year. The whole of this aggregate, if I read the financial statements correctly, goes into the dividend paid to remaining members the next year. The only excuse for exacting it from the outgoing members is thus confessed to be groundless; for, just so far as it has any force, the surrender charges should be either expended in getting new recruits, or added to the reserve to diminish the increased risk on the remaining members.

III.

A LITTLE ARITHMETIC.

In the view of omniscience there is no such thing as chance: in the view of human ignorance there is much of it. When we observe, that, in a great nation, the deaths in a year are always about two or three per cent of the whole population, while the births are the same, or a little more, we conclude that the human race is immortal. Yet death to every individual is only a question of time, and the time is subject to what we call chance. If we take a year as the measuring-unit of time, and measure age by it, we shall find that the chance of dying within a year at different ages is very different.

In a population of 40,000,000, there will be found always very nearly 563,000 persons of the age of 35, and under 36. Of these, 5,227 — and no mortal knows who — will pretty surely die with-

in one year. And, in the same population, there will be found 163,000 persons of the age of 75, and under 76, out of whom 15,577 will die within one year. Hence we say that the chance of dying in a year at 35 is a little less than 1 per cent, and at 75 a little less than 10 per cent; and, at the latter age, it is a little more than ten times as great as at the former.

A Mortality Table — there are many of them, and they differ but little from each other — is a set of the numbers of the living and dying at every age up to 100 — a little more or less — out of a population of 100,000 or 1,000,000 at the start. The one perhaps most used for life-insurance is called the Actuaries', and is derived from the experience of the oldest British life-insurance offices. It starts at the age of 10 with 100,000 lives, and gives the number that will die in each year out of the number left alive at the beginning of it, till the last individual dies at the age of 100. It stops here, because, to a person not over 70, the chance of living beyond a century is not worth a cent, perhaps not a mill.

To give a perfect idea of the Actuaries' Table,

and solve problems enough to fully illustrate its application to the insurance of a single life, it will suffice to give two bits of it, of five years each: —

TWO BITS OF A MORTALITY TABLE.

Age.	Living.	Dying.	Age.	Living.	Dying.
35	82,581	767	70	35,837	2,327
36	81,814	776	71	33,510	2,351
37	81,038	785	72	31,159	2,362
38	80,253	795	73	28,797	2,358
39	79,458	805	74	26,439	2,339

In applying the table to life-insurance, it is the ratios of the numbers to each other, and not the numbers themselves, that signify. In giving numerical values to chances, we represent *certainty* always by *unity*, or 1. This unit is the sum of all the chances or things that can possibly happen. Thus, of the 82,581 persons alive at 35, the certainty in regard to each individual is, that he will either die within one year, or live through it. Hence, by rule of three, as 82,581 is to 767, so is 1 to .00929 (or .00928785, if we carry the decimal to unnecessary accuracy), the chance of

dying in a year. And as 82,581 is to 81,814, so is 1 to .99071 (or .99071215, to be more exact), the chance of living through the year. The certainty is made up by adding

Chance of living	.99071
Chance of dying	.00929
	1.00000

Similarly we find the chance of dying in any number of years, or living through them; and, as one chance is always complementary to the other, it is necessary but to find the one to have the other. Thus, for example, at 70, as 35,837 is to 26,439, so is 1 to .73775, the chance of living through four years. Subtracting .73775 from 1 leaves .26225, the chance of dying in four years. And all the school-boys now know enough of algebra to understand me when I write it $1 - .73775 = .26225$. And so at 35, by using the ratio of 82,581 to 26,439, we find the chance of living to the age of 74 to be .32016. Hence the chance of dying before that age is $1 - .32016 = .67984$.

Honest life-insurance managers, after excluding all applicants who are manifestly sick or invalid, are both ignorant enough and wise enough to treat

all they insure as having the same chances of life at the same age, or nearest unit of age. To depart from this is to assume a degree of foreknowledge very likely, as in the case of the American Popu lar, to lead to grief. The principle of equity underlying the business is, that at the beginning of every policy-year, for a given sum insured by the company, the insured shall actually or virtually pay in proportion to his tabular chance of dying in that year. The correctness of this principle in the abstract will be admitted at once by everybody. But, in the concrete or practical application of it, the companies usually make wild work, because they do not distinguish what they insure from what they don't.

Plainly, on the principle above stated, leaving out of account the working-expenses of the business, and supposing the tabular mortality exactly realized, one year's insurance of a dollar at 35 will cost 9.29 mills ; and, at 70, 64.93 mills. This is on the supposition that the claims are settled, and the payments for the insurance are made at the end of the policy-year. But the paying for dead horses *after* they are dead is not found the

wisest way in human affairs. Hence the payments for insurance are commonly made yearly in advance; and the above payments, discounted at 4 per cent, become 8.93 and 62.44 respectively. These are called *net natural* premiums, and are, of course, $8.93 and $62.44 per $1,000 insured for one year.

I propose to consider just two kinds of policy — term insurance and endowment insurance — on single lives; for really there is not enough of any other kind to be worth writing about.

The net natural premiums for term policies of $1,000 entered at 35 and at 70 (and, whether for five years or longer terms, the premiums for each year of age are the same) are as follows: —

Age.	Net Natural Premiums.	Age.	Net Natural Premiums.
35	$8.93	70	$62.44
36	9.12	71	67.46
37	9.31	72	72.89
38	9.53	73	78.73
39	9.74	74	85.07

An endowment insurance policy for five years,

to be paid for by *natural premiums*, differs from those two-term policies only in having the fifth premium $961.54 in both cases, instead of $9.74 in one case, and $85.07 in the other. This means that there is no insurance at all in the last year of the endowment insurance policy, and nothing but insurance in the previous years, as there is nothing else in any year of a term policy. Or, to use a technical term (to be fully explained by and by), there is never any *self-insurance* under any policy paid by *natural* premiums, except in the last year of an endowment insurance policy, when there is nothing but self-insurance.

There are two objections to carrying on life-insurance with natural premiums. The first and most obvious is, that there is nothing to secure the persistence of the payments. The company is bound for a long term, and the individual is loose. Mr. Homans obviates this objection by requiring a deposit in addition to the first premium, which, with its interest, will be forfeited by non-persistence.

The other objection is, that the necessity or demand for insurance on the part of the individual

commonly decreases as life proceeds; while the natural premiums make no provision for the gradual diminution of the insurance done by the company by an increasing series of self-insurances; that is, an accumulation payable to the party himself if he survives a certain term.

IV.

COMMUTATION AND ITS EFFECT.

THE last chapter gave five consecutive premiums naturally growing out of the Mortality Table at the ages of 35 and 70. For practical purposes, in life-insurance these are always commuted either into a single premium, payable once for all at the start, or into a limited number of equal annual premiums payable for a part of the term, or into equal annual premiums payable during the whole term. The process of commutation is not taught in the schools; and the effect of it is either not understood, or grossly misinterpreted, by the life-insurance managers and their special journals.

Assuming the same unit of time for compounding interest as is assumed in measuring age in the table, viz., a year, our first step in commuting a series of premiums is to find the value, at the start, of a unit of money payable at the beginning

of each and every year of the term, discounting at the assumed rate of interest, and by the chance of its being paid; that is, of the party being alive to pay it. The first unit, being payable in advance, is an undiminished unit. The second unit, if payable certainly, would be diminished by being discounted a year (column A); but as it is only payable contingently, it must be further diminished by being multiplied by the decimal expressing the chance of the insured living a year (column B). So the third unit must be discounted for two years, and that present value must be reduced by multiplying by the chance of living two years; and so on for the third, fourth, and fifth. At 4 per cent, here are the factors for five payments: —

AGE THIRTY-FIVE.

YEAR.	A. Pres. Val. of a Unit Payable Certain.		B. Chance of Living to Pay.		C. Pres. Val. of a Unit Payable Contingent.
First.....	1.	×	1.	=	1.
Second.....	.961538	×	.99071	=	.95261
Third.....	.924556	×	.98132	=	.90728
Fourth.....	.888996	×	.97181	=	.86393
Fifth.....	.854804	×	.96218	=	.82248
Sum of five payments					4.54630

AGE SEVENTY.

YEAR.	A. Pres. Val. of a Unit Payable Certain.		B. Chance of Living to Pay.		C. Pres. Val. of a Unit Payable Contingent.
First.....	1.	×	1.	=	1.
Second.....	.961538	×	.93507	=	.89910
Third.....	.924556	×	.86946	=	.80387
Fourth.....	.888996	×	.80355	=	.71436
Fifth.....	.854804	×	.73776	=	.63064
Sum of five payments.....					4.04797

Having thus found the value of a unit payable contingently at the beginning of each and every year of the term, it is plain, if this value for any year is multiplied by the natural premium due in that year, it will give the value at the start of that natural premium. Thus at 35 we shall have, —

YEAR.	C. Value of Contingent Unit.		D. Nat. Premiums per $1,000.		E. Pres. Value of Nat. Premiums.
First.....	1.	×	$8.93	=	$8.93
Second.....	.95261	×	9.12	=	8.69
Third.....	.90728	×	9 31	=	8.45
Fourth.....	.86393	×	9.53	=	8.23
Fifth.....	.82248	×	9.74	=	8.01
Sum of present values, or single premium of term policy.....					$42.31

If we were calculating the single premium of the five-year endowment insurance at the same

age, we should only have to substitute for the last line above, —

Fifth..... .82248 × $961.54 = $790.85

which would make the sum or single premium of that policy $825.15. Having found thus the present value of all the natural premiums per $1,000 (sum of E), and having also the sum of the present values of all the units (sum of C), it is plain enough, that as this latter sum is to a unit, so is the single premium to the *commuted annual premium*, which has been the object of our anxious search. That is, by rule of three, as 4.5463 : 1:: 42.31 : 9.31, the commuted annual premium of the five-year term policy at age 35. And as 4 5463 : 1 :: 825.16 : 181.50, the commuted annual premium of the five-year endowment policy at the same age. And at age 70 we have to go through an exactly similar process, thus : —

Year.	C. Value of Contingent Unit.		D. Nat. Premiums per $1,000.		E. Pres. Value of Nat. Premiums.
First.....	1.	×	$62.44	=	$62.44
Second.....	.89910	×	67.46	=	60.65
Third.....	.80387	×	72.89	=	58.59
Fourth.....	.71436	×	78.73	=	56.24
Fifth.....	.63064	×	85.07	=	53.65
Sum of present values, or single premium of term policy.....					$291.57

And substituting for the last line in the above calculation, —

Fifth..... .63064 × $961.54 = $606.38

we shall have the sum of the present values of the natural premiums 844.30, which is the commuted single premium of the five-year endowment insurance at 70. And, to get the commuted annual premiums for both policies at 70, we have the proportions: —

4.048 : 1 :: 291.57 : 72.03 for term.
4.048 : 1 :: 844.30 : 208.57 for end.

The sums (column C) of the present values of the contingently-payable unit are called annuities on the life; and the shortest expression of the rule for commuting the series of natural premiums into equal annual premiums is, first find the net single premium, and then divide it by the immediate annuity for the term.

We have thus found, by a process which I trust is not too difficult to be understood by any man who is resolved not to be imposed upon, the net commuted premiums for a term of five years: —

Age.	Term Insurance Policy per $1,000.	Endowm'nt Insurance Policy per $1,000.
Thirty-five	$9.31	$181.50
Seventy	72.03	208.57

These are the net premiums as they have always been calculated; and, with an addition for expenses and extraordinary death claims, they are the ones commonly charged for such policies.

We now come to consider the effect of paying these commuted premiums instead of the natural ones; and here we shall consider, and, I hope, dispel, some mystery.

At 35 the net natural premium to insure $1,000 for one year, column D, is $8.93; which means that that is the normal or tabular cost of carrying the largest risk the company can carry on $1,000 insured; to wit, $990.71. But if, for any reason whatever, more is paid, less risk is carried; that is, the company does not insure so much in that year. What the company insures is proportionate to what it is exposed to lose by the occurrence of death. On the term policy, what it is

exposed to lose, if the natural premium is paid, is the $1,000 less the natural premium, with a year's interest, or 1,000 — 9.29 = 990.71. What it will lose on the same policy if the *commuted* premium of $9.31 is paid is 1,000 — 9.68 = 990.32. Hence as 990.71 : 1000 :: 990.32 : 999.62. Thus, with the commuted premium, the company does not insure so much the first year by 38 cents as with the natural premium, even on the term policy. But on the endowment insurance policy the difference of the insurance becomes far more important. For example, when $181.50 is paid in advance, instead of the $8.93, the company is exposed to lose by the death 1000 — 188.76 = 811.24, instead of 990.71. Hence as 990.71 : 1000 :: 811.24 : 818.85.

If the company really insures in the first year, in this case, only $818.85, who insures the remaining $181.15? Who but the policy-holder himself, by paying so much more than enough to insure $1,000? Here we see "self-insurance" crop out decidedly, — not a bowlder, but a rock in place. A schoolboy will not fail to see, that, if the natural premium for $1,000 insured amounts

to $9.29 at the end of the year, the natural premium for $818.85 will amount to $7.61 at the end of the year: hence if the death occurs in the year, and the claim is settled at the end of it, the amount will be made up thus: —

Policy-holders' stake for the year, with interest.....	$7.61
Company's stake or loss, made up by the stakes of policy-holders that did not die.....	811.24
Self-insurance of the party	181.15
Total	$1,000.00

If the insured on this policy survives to pay his second premium, not a cent of his $181.15 can be used to pay expenses or claims on other policies. The new premium being added to it, and interest on the whole for one year at 4 per cent, the company is exposed to lose in the second year only $622.84. And since, if the natural premium had been paid in this year for $1,000, it would have been exposed to lose $990.52, we have, As 990.52 : 1000 :: 622.84 : 628.80. Therefore the self-insurance in the second year is 1000 — 628.80 = 371.20.

Calculating in this way, we shall find the effect of commuting the natural premiums to be a slight

reduction of the company's risk, or insurance, in the early years of the term policy, and a very large reduction on all the years but the last of the endowment insurance; the last year being wholly self-insurance as it was with the natural premiums. Thus: —

Year.	Term Policy.		Endowment Policy.	
	Insurance.	Self-Insur'nce.	Insurance.	Self-Insur'nce.
1	$999.62	$0.38	$818.85	$181.15
2	999.39	0.61	628.80	371.20
3	999.35	0.65	429.35	570.65
4	999.56	0.44	219.96	780.04
5	1,000.00	0.00	0.00	1,000.00

It will be noticed that in the term policy the slight excess of the commuted term premium over the first two natural ones is held in reserve to supply the deficiency of the last two. This is the explanation commonly given by the managers and some actuaries of the function of the reserve in all cases. But it is true only in regard to term policies, a very insignificant part of the business, and still more of the reserves held. It is not at

all true of endowment insurance policies. Even the longest of them, which is the ordinary *whole-life* policy, never requires any of the reserve to pay for the insurance done on the latest years, but only a part of the 4 per cent interest on it.

While the commutation has reduced the aggregate of insurance $5,000 under the natural term policy only by $2.08, it has reduced the aggregate of $4,000 under the endowment insurance policy by $1,903.04.

It is quite true that there is a different explanation, or rather *mystification*, of the endowment insurance policy, which represents it as consisting of two policies, — one positive, and the other negative, as to the life-contingency, — one telescoped into the other. But hereby hangs a very wonderful tale, which must be saved for another chapter.

V.

HOW THINGS ARE MIXED.

THE object of calling public attention so painfully to figures in the two preceding chapters has been to establish the fact, that, when the premium is made level or constant by commutation, another business besides insurance is necessarily assumed by the company; viz., the accumulation of money in trust for the insured, whereby he is made to become, to a certain exactly precalculable extent, a *self-insurer:* but this, if not carefully, is pretty effectively, concealed from him by never distinguishing between the insurance and the self-insurance, either in the policy or in the accounts. Were policies only taken for short terms, this would not matter much; but they are mostly taken for the longest possible term, payable at death, whenever that event may occur. This has occasioned what can

hardly be regarded otherwise than as a mathematical joke in life-insurance, of which I must say a word before I go further; the more so because, after a prodigious blunder was made in regard to endowment insurance policies (of which more by and by), the life-insurance managers fell back upon what they called "the good old ordinary *whole-life* policy;" and it is this which is the subject of the joke.

Human life is liable to extend rather indefinitely, as of Messrs. Parr and Methuselah. Yet the Mortality Table always stops somewhere; and its last man is assumed to have become a corpse before that. For example, the New-York table does not extend beyond the age of 96, nor the Massachusetts beyond that of 100. Hence, in Massachusetts, it is assumed that a man aged 35 should not live more than 65 years longer. Hence, if we commute all the natural premiums of the table, either for a term insurance, an endowment insurance, or a whole-life policy, to a level annual premium payable during the 65 years, we shall get, in each case, the same result, $17.87 per $1,000. But if the insured

should take the term policy for 65 years, and live to see his 101st birthday, he would get *nothing*. If he should take the endowment insurance, and do so, he would get $1,000. If he should take the *whole-life* policy, and do so, he would have to pay the sixty-sixth premium, or get nothing. Indeed, though the company would have the full $1,000 of his self-insurance in possession, he would have to keep on paying till death to get any thing, even should he live as long as they ever did before the flood. To be sure, he ought to get, and perhaps would get, back in dividends all these premiums, *less expenses*. Of course, people who mean to live into their second century had better have their policies written in the endowment insurance form, if this grim joke is to be kept up. The premium is just the same.

Seriously, every *whole-life* policy is essentially ridiculous, and deserves to bear the date of April 1.

All life-insurance policies ought to be written to stop about the age when a man may be expected to enter his second childhood, whether the face of the policy is then payable to himself or not. If it is made payable to himself on

reaching the age of, say, 75, it provides against two possible contingencies, — the loss by those dependent on him, in case of his death; and his own dependence on others, in case of his living to be old. The difference in annual payments between a whole-life policy and one terminating in endowment at 75, if taken at 35, is about $2.50 per $1,000 of the policy.

The more any commuted premium exceeds the natural premium at the start, the more rapidly does the self-insurance increase, and the insurance diminish. The net commuted annual premium for a term policy for $1,000, commencing at 35, and terminating at 75, is $14.47; and, for an endowment insurance policy for the same term, it is $21.12. The self-insurance on the term policy will increase, till, at the age of 64, it is about $273; from which time it will decrease more and more rapidly, being used up to carry the increasing risk, till, at 74, it is nothing. Of course, if he survives the term, the insured can receive nothing. On the endowment insurance policy the self-insurance increases, by reason of the larger premium, so much faster, that, at 64, it is $596,

instead of $273; and the company is insuring only $404, instead of $727. Consequently, on the endowment insurance, the risk being so much less, and the premium so much larger, the self-insurance continues to increase more and more rapidly, till, at 74, it is $1,000 by the last payment. Consequently, it makes no difference to the company in that year whether the insured lives or dies.

But the reader will say I have been talking as if the mortality was to be always exactly that of the table, and there were no expenses. True. But the company fortifies itself against fate or fickle fortune in two ways. It selects a table which gives a death-rate, on the average, considerably larger than that which it expects as an average fact; and then it adds to every premium what it considers more than enough to meet expenses: so that if its policies number over a thousand, and are reasonably limited as to amount, there is almost no chance that the death claims of any year and expenses will touch the self-insurance of any surviving policy-holder. If there were any danger of that, there should be a capital to fall back upon.

VI.

HOW WE BLUNDERED.

NOT distinguishing between insurance and self-insurance, and not regarding the effect of the commutation of the natural premiums upon the risks assumed by the companies, has led to the wildest work in making the arbitrary additions or loadings of the premiums. The commuted *whole-life* premiums received an addition or loading of 33 per cent, so that a net annual premium of $19.87 became a gross or actual premium of $26.49; and, with premiums so large as this, the expenses must be extravagant ever to trench on the self-insurance arising out of the net premium. But, when the same percentage of the net premium for a term policy is added to it, the loading is comparatively insufficient; while, if an endowment insurance policy is treated in the same way, the loading becomes enormous, and

the more so the shorter the term. The mistake is in giving any loading at all to the *deposit part* of the premium. That part, and the fund arising from it, should be treated as it would be in a savings-bank, in the assessment of expenses; and of course it can be, if the actual interest on the investments sufficiently exceeds that assumed in calculating the *self-insurance*. As the company runs no risk of losing on this by death, there is no occasion to load it as a safeguard against occasional extraordinary mortality. So far as that is concerned, the loading should be exclusively on the insurance part of the premium, or normal cost of carrying the risk each year, which the company, under the commutation, is obliged to carry. This normal cost varies from year to year, increasing gradually on long terms for a considerable part of the term, and diminishing rapidly on short ones. If it were loaded by a percentage of itself, the actual premium would be no longer level or constant. It is more convenient to have the actual premiums the same from year to year, and always more than sufficient, and adjust annually by returning the vari-

able surplus, the variations of which can be as well understood by the policy-holder as by the officers, if the policy is properly drawn, and the facts are annually reported.

Recurring to the five-year endowment insurance policy at the age of 35, of which, in Chapter IV., I found the net commuted annual premium to be $181.50 per $1,000, we shall see that this premium will divide itself between normal cost and deposit in the successive years of the term, as in the following table : —

Age.	Insurance.			Self-Insurance.	
	Normal Cost.	Amount.	Insurance Value.	Deposit.	Reserve at End of Year.
35	$7.32	$818.85	$18.24	$174.18	$181.15
36	5.73	628.80	11.44	175.77	371.20
37	4.00	429.35	5.99	177.50	570.65
38	2.13	219.96	2.13	179.37	780.04
39	.....	.....	.....	181.50	1,000.00

These normal costs are the natural premiums (as any one will see by comparing them with the natural premiums at the same ages for insur-

ing $1,000) to insure for one year the amounts opposite them. The residue of the $181.50 is deposit, which must accumulate at 4 per cent. Now, if we are going to fortify a life-insurance company against fate by adding margins to the net premiums, we should have some regard to the present value of the risks we assume under the policies. Just as we found the present value of the natural premiums in Chapter IV. in commuting them into a single premium, I find the value of all the normal costs at the start to be $18.24; at the beginning of the second year, $11.44; and so on. This I call "*insurance value;*" that is, the prospective value of the insurance to be done under the policy. And, if we calculate in the same way the insurance value of a whole-life policy of $1,000 entered at the same age, we shall find it about $215. So far as regards providing for expenses to build up and enlarge the company, and against extraordinary mortality, it would seem that the margins added to the two net premiums should be about in the ratio of 215 to 18.24. If $6.62 is enough to add to the net whole-life premium, then about 60 cents would

be enough to add to the five-year endowment insurance premium. But, not to put too fine a point upon it, let us compare the contemporaneous risks on the two policies for five years. On the whole-life policy, the aggregate normal costs or values of the insurance done in five years is $46.46 ; on the endowment insurance it is $19.17. Hence, if we regard the contemporaneous risks, if $6.6a is a sufficient addition for the whole-life premium, $8.73 should be for the endowment: therefore the actual or office premiums should be $26.49 for the former, and $184.23 for the latter. Yet I open the book of rates (Mutual Life of New York) used by most of the companies, and find $26.38 set down for the whole-life, and $221.37 for the five-year endowment. This was got at, probably, by adding 33 and 22 per cent respectively to net premiums slightly different from those I have calculated. The insurance and deposit parts of the net commuted premium should never be mixed ; for the latter has, or should have, nothing to do with margins or agents' commissions. Who first made the egregious blunder of making margins or pay-

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ing commissions by percentage on the mixed premium, I do not know; but I *do* know it is what has played the mischief with American life-insurance. If common sense and common arithmetic cannot keep them separate in the policies and the company's books, the law should do it. If there is any other actuary who was more or less busy about life-insurance from 1844 to 1868, and did not discover the enormity of this blunder, as applied to endowment insurance, sufficiently to make a fuss about it, and does not now feel very cheap that he did not, he feels differently from what I do. But that it was not corrected as early as 1870 is not the fault of any actuary that I know of. I shall endeavor to show hereafter that it is not too late, in regard to future business, to make the correction, and that nothing else can save the business from entire ruin.

VII.

NOT TOO LATE TO MEND.

It will have been gathered from previous chapters, that, the lower the rate of interest assumed in commuting the natural premiums, the larger the commuted premiums will be, and the larger the self-insurance fund will be at the start. Of course, whatever the rate, the self-insurance fund must exactly equal the face of the policy at the end of the endowment term, or, on a *whole-life* policy, when the life extends to the limit of the table. Fortunately, we took our premiums from England, where they were calculated at a low rate of interest; and having also adopted the same low rate in calculating the reserve, or self-insurance, we have two important safeguards to the solvency of our companies,—high premiums, and extra interest on the accumulations. It does

not follow that a company with these high premiums has become insolvent if it has allowed its reserve to become impaired; but it does follow that it has been extravagant if this occurs after its business is once established. The natural cure for this extravagance is, not to dissolve the company, but to forbid its issuing new policies till economy has repaired the deficiency in the reserve.

Thanks either to the conservative character of the officers, or the interference of law, nearly all of our leading companies have maintained full reserves on the 4 per cent standard. There is no reason, therefore, in their cases, why they cannot treat policy-holders who wish to retire with substantially the same justice which the Supreme Court of the United States lately awarded to those cut off by the Rebellion.

I have already fully admitted that the cohesion of a life-insurance company cannot be secured without exacting from a member prematurely retiring in good health a surrender charge; but, if the figures I have since referred to mean any thing, this charge should not be in proportion to

the self-insurance on the policy, though it has to be paid out of it. Its amount must be determined by the "insurance value" of the policy. The interest of the company in retaining a healthy member must be proportionate to the insurance he is to take and pay for, not to his self-insurance. So the company can afford to pay the agent only according to the "insurance value" he brings into it, and not at all according to the premium he brings in, mixed as that is of insurance and self-insurance. Hence, if we could ascertain what it would cost, that is, what percentage of the "insurance value," to bring insurance value into the company, then, by charging a little more than that percentage on his "insurance value" to the retiring member, the company would be sure to keep itself whole; for the demand for insurance is not going to cease.

Before the endowment insurance business began, which was not, to any considerable extent, till 1858, the first commissions of agents, which were from 15 to 30 per cent of the premiums, varied from about 2 to 4 per cent of the "insurance values;" but when they came to be paid the

same, or nearly the same, commissions on the premiums of short-term endowment insurance policies, they often received 50 per cent, and sometimes more than 100 per cent, of the "insurance value." Of course, the companies could not have stood this, but for the absurdly exorbitant loading of the premiums, which, as we have seen in the case of the five-year endowment insurance policy, was about $39 per $1,000, while the "insurance value" was but $18.24. The agents, being quite sure of their interest in the matter, never led the insured to inquire whether *they* could stand it or not. Accordingly they went in blind, till the endowment insurance business, from being less than $1,000,000 insured in 1858, was more than $330,000,000 insured in 1868; having, in ten years, increased from less than 1 per cent to over 23 per cent of the whole business.

As the agents were paid inequitably, and the working-expenses were assessed inequitably, the endowment policy-holders could not but find out, after a few years, that they were putting money into a savings-bank that paid a *negative* interest, or, to speak plainly, swindled.

In 1868 the actuaries, the men who make the figures, or rather *some* of the figures, began to be deeply moved on this subject, as well they might be. They are, in general, a modest class of men, whose judgments and brains, so far as they have any, are used by the managers only so far as *they* see fit. They compared notes, and were frightened at the most awful blunder that had ever been made, probably, in any financial business on this planet. It was plain that nothing could be done effectively to correct the blunder, unless the companies could act in concert, because the agents of all the companies were interested in perpetuating the error. If one company alone should reform, its agents would ruin it by carrying off its policies to some other company. The agents are the motive power. So, after anxiously considering the matter, it was concluded to attempt to bring about a concerted action of the executive officers of the leading companies to change the base of agents' commissions from premiums to "insurance value," and so to reform the assessment of expenses, that endowment insurance policy-holders should no longer be comparatively

robbed. For this purpose (in the summer of 1870, I think it was), some twenty actuaries met in the board room of the largest company, the president and some of the trustees being present, and agreed substantially as to the desired reform. The president promised to call together, as speedily as possible, the executive officers of the leading companies, to give this reform practical effect; but no such conference was called. The excuse afterwards made, that the actuaries were not agreed, was an afterthought, and false at that. The business, loaded with this monstrous blunder, has been allowed to drift toward chaos as fast as it would.

And now there is nothing for it but for the people and the policy-holders to take the matter in hand themselves. The present policy-holders are bound by contracts which they ought never to have been asked to make, and which they never would have made if they had fully understood the subject. If they will unite, they can, at least, oblige the Supreme Court of the United States to decide whether their rights, under these contracts, are not as good as if they had been rebels.

As for the outside public, who really need insurance, let them, when solicited to insure, insist upon having inserted in the policy how much *cash* the company will pay at the end of each and every policy-year, in case of surrender. This the company can as safely do as it can do any business whatever. And there are, at least, twenty perfectly solvent companies in this country, that will do it when the demand is loud enough and general enough.

VIII.

GAMBLING ON PERSISTENCE.

I HAVE spoken of life-insurance as necessarily involving a game of chance, justified by its meritorious object. It is important to know how far, in practice, the gambling is unnecessarily extended.

Three things are essential to the permanence and prosperity of the company. First, that the members shall enter in good health, and without inheritance of special disease; second, that each shall contribute yearly in advance to the fund for the payment of death-losses during the year, in proportion to the chance, as measured by some Mortality Table, of the company's losing by his own death during the year; third, that, when the policy covers a term of years, the persistence of the annual advance payments shall be sufficiently secured. What is called co-operative

life-insurance generally fails, partially or wholly, for want of the second and third essentials.

By the aid of a Mortality Table, with a death-rate somewhat higher than that of well-selected lives, and frequent distributions of surplus, a company is able to secure a satisfactory equity between its members, and make it as advantageous for a young person to join an old company as a new one.

By using *commuted* premiums, which necessarily give rise to a reserve or self-insurance fund, the company is able to secure the persistence of the payments. For example, suppose 1,000 persons join a company, and pay an aggregate of $100,000 of commuted premiums for the first year. Of this, about $25,000 will be loading, or margin, for expenses and *extra* mortality; about $37,500, the *normal cost*, or net premium, to pay the tabular death claims of the year; and $37,500 deposit in the self-insurance fund. It is plain, that if the commissions and other expenses have fallen within the $25,000 (deplorably they often do not), and the death claims have not exhausted the $37,500 (as they seldom do),

there will be $37,500 and interest, and some surplus, left in the hands of the company out of the first year's premiums. If any member then retires, he must leave his share of this $37,500. Suppose one-third of them should do so; the company then has $12,500 in hand to recruit new members in the place of the 333 who have retired. The supposition is, that it cost originally to get in that number of members not so much as $8,333 in commissions, or, say, 15 per cent, = $5,000. It is pretty plain, that by paying $17,500, as the company is now able to do, it will not fail to fill up the gap of 333 with newly-selected lives, and will be as well able to take care of any bad risks left on its hands as it was before.

Hence it is obvious, that if a company does not indulge in extravagance of expenses, and pay at the start more than 15 per cent out of the premiums to obtain business, and the premiums are paid wholly in cash, the reserve of the *first* year gives ample security for persistence.

But the companies, even those that require the whole premium to be paid in cash, have not con-

tented themselves with a "surrender charge" never exceeding the reserve at the end of the first year. They have made the reserve itself, increasing as it does from year to year, substantially a bet on persistence. Whether a man will be able to pay in some future year is often to him as much a matter of uncertainty or chance as whether he will die in that year. Yet, in contracting his policy, he stakes the whole self-insurance fund that will have acccumulated on it at the beginning of each and every future year of it on his being able and willing to pay the premium then becoming due. This bet grows bigger and bigger every year; and the sense and prudence of it is not much enhanced by the fact that the company may, in its mercy and discretion, remit or return half, or two-thirds, or four-fifths, of the utterly unnecessary stake, when it becomes exorbitant and enormous.

Mr. Lewis, secretary of the New-York Chamber of Life-Insurance, who has occupied thirty-three pages of "The International Review" in an attempt to justify this old trap system, has elsewhere been obliged to confess, that, inasmuch

as a policy becomes less valuable to the company as it grows older, the charge for surrender should grow less, instead of growing greater, as the years pass away. In spite of this, he contends, like a Titanic janizary, that no cash surrender value should ever be paid, — as if values could not be conveniently measured by cash, — but that "surrender value" should be paid, if at all, by *further insurance*, after deducting from the cash reserve the discounted value of all the margins on the *future premiums*. For example, at 50 a life-policy for $10,000 entered at 40 has a reserve, *all cash*, if the premiums were paid in cash, of $1,627. The margin on the annual premium is $78.20; and at 50 the present value of these annual margins *in futuro* is $887.50 discounted at 6 per cent Actuaries' Mortality, and $1,053.20 discounted at 4 per cent. I suppose Mr. Lewis means to make the latter his surrender charge; but, if he only means the former, he reduces the cash reserve to $741.50, and then pays it merely as a reversion of $1,538. Considering all the circumstances, and especially the solvency of premium note companies that never

collect the notes in their reserves in case of lapse, the impudence of this proposition is colossal. Of course it is not, in "The International Review," couched in the plain terms I have used above. But these terms exactly express the meaning in which Mr. Lewis's long article culminates, and the grand, practical conclusion for which it was written; viz., to save, as far as possible, the system of *gambling on persistence.*

This system, which in an all-cash company, as the policies grow older, brings more and more money into the company beyond the fund necessary to maintain its solvency, is particularly convenient to the managers, and, if these managers are not too greedy, inures to the benefit of those who keep up their policies. It is, in fact, a game of chance between the short purses and the long ones, which cannot but benefit the latter, if not played to such an extent as to disgust the public too much. Since the discovery of the great mistake in the conduct of the endowment insurance business, the victimizing of the outgoers has injured the instayers, by preventing fresh accessions, more than it has benefited them by adding to their dividends.

But it is idle for Mr. Lewis, or the vast money-power behind him, to try to save out of this old gambling system any thing more than a small, never-increasing surrender charge, to be fixed and prestipulated. The fate of the system was sealed by the Tontine Policies.

Less than ten years ago, the Equitable Life Assurance Society of the United States, of New York, announced the issue of what it called *Tontine Policies*. Here the gambling on persistence is enhanced by involving in it the surplus as well as the reserve. But it is not for the benefit of the company, but only of particular policy-holders. The company, as such, holds the stakes, but wins nothing. It simply sets the policy-holders entering in a particular year, and consenting to it, into a game with each other, which is to last ten, fifteen, or twenty years, as they may elect at the start. Hence, as the business has been going on about seven years, there are probably, by this time, twenty or more of these games in progress, the oldest of which will not terminate till about three years hence. The surviving member or members of the first set which elected the ten-

year Tontine term will then be entitled to all the surpluses in that set on the policies deceased and lapsed, and to the reserves of the latter at the time of lapse, with interest accrued on both. It was ascertained in the recent investigation, that the Tontine profits, or surpluses and reserves, already forfeited in all the sets, amount to about $2,200,000; but, strangely enough, the superintendent of insurance did not count this sum as a liability over and above the reserves on the outstanding policies, because it is not specifically defined in the policy itself, but only in a prospectus, or "plan," to which the policy refers. If the society should, on the completion of the first Tontine period, refuse, as stakeholder, to pay over the winnings to the survivors of that Tontine class, should there be any, a considerable explosion may be looked for. That there will be no survivors is hardly to be expected of any class; for the number of outstanding Tontine policy-holders is understood to be 10,000 or 11,000, giving an average of about 500 still alive of each gambling set. And the fewer survivors in any set, the larger the prizes.

It is to be hoped that this absurd and wholly unjustifiable addition to the gambling on persistence will lead to the entire extinction of it in all our companies, or, in other words, to the substitution for it of an equitable security for persistence, in a prestipulated surrender charge and cash surrender value.

To a vast number of families in our every-one-for-himself civilization, life-insurance of some sort is a necessity. But we live to live, not simply to die. The first aim, therefore, of the family, is to accumulate. The savings-bank is the great fundamental institution of free society, whereby the under and upper surfaces are to be bound together for a common and harmonious progress. What the ordinary savings-bank, in its best and safest form, lacks, is a life-insurance function, whereby, without unnecessary cost, the accumulation may be complemented in case of the premature death of the productive member of the family. As every permanent and faithfully managed life-insurance company does in fact exercise the two functions of accumulation and insurance, there can be no incongruity between the two.

And there can be no more danger in applying to the management of a life-insurance company a direct responsibility to the policy-holder than there is in applying it, as we necessarily must, to the management of savings-banks in regard to depositors. In the last ten years, $346,000,000 of money have been withdrawn from the savings-banks of Massachusetts ; but, in the mean time, fresh deposits have increased their aggregate from $80,000,000 to $243,000,000. What possible excuse is there, then, for making the life-insurance policy, by reason of the accumulation under it, a trap which screws up tighter and tighter, till liberation comes only by death, or expiration of the term ? When there is as perfect an understanding between the company and the policy-holder as between the savings-bank and the depositor, and there is no forfeiture out of proportion to the damage of non-fulfilment of contract, life-insurance will recover its popularity, and take thorns out of the pillows of young fathers, who now shun it as they would a pestilence.

IX.

THE TRAP JUDICIALLY CONSIDERED.

CLAIMS for the full amount insured under certain Southern policies, where premium payments had been interrupted by the war, having been put in suit against certain Northern insurance companies, the full bench of the Supreme Court of the United States decided against the claim for the *insurance*, but in favor of one for the *self-insurance*, or "reserve fund," which was held by the company under the policy at the time of the lapse of the premiums.

The Court says, —

"This reserve fund has grown out of the premiums already paid. It belongs, in one sense, to the assured who has paid them, somewhat as a deposit in a savings-bank is said to belong to the person who made the deposit. . . . To forfeit this excess — which fairly belongs to the assured, and is fairly due from the company, and which the latter

actually has in its coffers, and to do this for a cause beyond individual control — would be rank injustice."

Here we have it established by the highest authority, that the reserve on a life-insurance policy is an "excess" over the cost of the past insurance, which, in a sense, belongs to the policy-holder. It does not follow from this that he can withdraw it, unless the further insurance has been forfeited or prevented by "a cause beyond individual control;" but it does follow, that while it is not withdrawn, and the insurance is not forfeited or prevented, it cannot be used to pay a claim on any other policy; and as it can be used, and always is used, to pay, as far as it goes, a claim arising on the policy itself, its sole function is to diminish the risk borne, or insurance done, by the company. Hence it is simply a *self-insurance* or trust fund.

Now, it may happen in a time of peace, as well as one of war, that, "for a cause beyond individual control," it may be impossible to keep a policy in force by paying further premiums. In all such cases the bearing of the decision is manifest.

It may also happen that the motive for making the insurance has ceased, or that the insurable interest has ceased. In either of these cases, it is still true that the policy-holder has the qualified right of property in his reserve, which the Court has asserted. The question is, Whether, when the policy-holder is not uncontrollably and absolutely precluded from keeping up his policy by paying further premiums, he can, for any reason, withdraw any part of his reserve or self-insurance money? and, if any, how much? The bearing of the decision on this question is exceedingly important both to the companies and the individual policy-holders.

WHAT THE COURT HOLDS THE COMPANIES HAVE FORMALLY DENIED, BUT VIRTUALLY ADMITTED.

Hitherto all the life-insurance companies have denied the policy-holder's having any more right of property in the reserve on his own policy than in that part of his past premiums required to pay death claims on other policies; and a minority of the court seems to sustain them in this denial. The policies or contracts expressively termed by

Mr. Justice Strong *unilateral*, or one-sided, have been usually so worded as to make the policy-holder disclaim or waive any such right. In England the companies have generally acted consistently with this denial and this wording of the policies; but in this country it has been otherwise almost from the inception of the business. Our companies have, in practice, virtually, if not expressly, admitted this right in a variety of ways.

First, a majority of them have always admitted it by not collecting the outstanding notes on lapsed policies, which had been taken as part of the premiums, and were included in the reserve or self-insurance. The same company would receive premiums, as the case might be, wholly in cash, or partly in notes on interest. This was the same thing as making a loan to the insured of the whole or a part of his self-insurance fund If this part-note payer let his policy lapse, the loan never had to be paid. The company gave it up as "the equitable value" belonging to him. But, if the all-cash payer let his policy lapse, — the two policies being of exactly equal terms and

value to the company, — he did not get back as much cash as the other did notes, as in equity he should, but just none at all. The Massachusetts Act of 1861, called, rather improperly, the Non-Forfeiture Law, took advantage of this unconscious admission of the policy-holder's right of property in the reserve to secure some approach to equity between the all-cash payer and the part-note payer, by obliging the company to carry the risk of the face of the policy, less forborne premiums and their interest, as long as four-fifths of the cash reserve, or cash part of it, would pay. Of course, in doing this, the law did not go so far in asserting the right of the policy-holder in the reserve as the companies had gone in admitting it; for the premium notes given up were often the whole of the reserve, and sometimes more.

That law, by the way, not applying, as of course it could not, to policies previously issued, leaving the companies at liberty to charge what premiums they pleased (though, to their credit, they have never pleased to raise their premiums on account of it), and making the surrender

charge against the lapsing policy-holder a percentage of his self-insurance, instead of the present value of the insurance remaining to be done for him by the company, was nothing but an attempt on the part of the State to regulate the future contracts to be made by its own corporations, and a very awkward and not wholly equitable one at that. It did not even aim at the real question; which was, how much cash, and not how much further insurance, the lapsing policy-holder was entitled to.

A still more decisive admission has latterly been made by all our companies, though perhaps unwittingly, in the change from the "percentage" to the "contribution" plan of dividing surplus. The greater part of the surplus, in a company of some years' standing, arises from the reserves earning an interest considerably larger than the rate at which they are required to accumulate, which is only 4, and in some States $4\frac{1}{2}$, per cent. If the policy-holder's right of property in his own individual reserve, which the Supreme Court now recognizes, did not exist, there would be no reason whatever, or next to none, against dividing the

whole surplus as a percentage on the premiums, in the old way. It was because each policy-holder was supposed (at least by the actuaries) to have a right to receive the excess of interest arising from the reserve on his own policy — what his policy had specially *contributed* to make the surplus — that the method of dividing was changed. And, if he had a right to this surplus of interest, it must have been because he had a right, subject, of course, to a certain equity, to the principal itself.

The condition, or equity, is, that he shall not withdraw so as to leave the company less able to carry out its contracts with other policy-holders.

It is easy enough to show, that if the healthy policy-holder, as a general rule, is required to leave the whole of his reserve with the company, *it* would be more than whole. For illustration, let us suppose a company, consisting of 92,000 members, insured for life or long terms for $305,000,000, and having an aggregate reserve of $68,000,000, and that sick and well are, on the average, equally self-insured by this reserve. In the natural course of things, the company may be

expected to lose one-fifth of these members by death in about fourteen years. Now, suppose that all the members who are destined not to die in fourteen years, really if not apparently the healthiest, should take it in their heads to retire at once, and relieve the company of $244,000,000 of its future liabilities, leaving in its coffers the whole of their $54,400,000 of self-insurance money. The company would then have in hand, against only $61,000,000 to be paid in the course of fourteen years, $68,000,000 of cash assets, and as good as a certainty of receiving all the premiums which the remaining members would live to pay. Hence, to a certainty, there must be cases in which some part of the reserve will equitably belong to the policy-holder, to withdraw at his own pleasure, because he can do it, and still leave the company more able to meet its engagements with other policy-holders than if he remained. He can even do it in many cases, though it were certain he would live through his whole term if he remained. These cases are most likely to be found in those policy-holders whose reserves bear the largest ratio to the faces of the policies, or who are most self-insured.

If this were not so, the companies should never, as they sometimes do, when application is made before the lapse, even by a very healthy policy-holder, pay back a part of the reserve in cash; much less should they, as they almost always do, make "divisible surplus" of the whole of the forfeited reserves and surrender charges.

The mathematical experts in life-insurance differ considerably as to the proper surrender charge to be deducted from the self-insurance fund on the surrender of a policy upon a healthy life. But they agree substantially in this, that it should not be a percentage of that fund itself, but of the present value of what the policy, if it continued, might be expected to contribute towards the payment of death claims on other policies. On the same assumptions which regulate the premiums and reserves, this is always a calculable quantity, and is called the "insurance value," in distinction from the reserve, self-insurance, or "equitable value" of the policy. Hence any company might as easily and safely have stipulated the terms of egress of a healthy life as those of in-

gress, and without any change of the latter on account of such stipulation.

Though the difference of opinion among actuaries as to the percentage of insurance value, which, as a surrender charge, will make the company whole for the loss of the healthiest policyholder, covers a considerable range, it materially affects only policies of recent entry. This difference of opinion becomes trifling on policies of long standing, or comparatively large self-insurance. If the rule of surrender charge by "insurance value" lost to the company should be admitted by the court at its *maximum*, the holders of *such* policies would recover by suits in equity an "equitable value" nearly as large as the self-insurance of the last year. Hence in a multitude of cases, where old policies are kept up with great inconvenience, where the insurable interest has ceased, or insurance has become superfluous, while cash is not so, this wise and just decision of the highest tribunal ought to bring valuable relief: and the well-managed companies only have to conform their practice to its doctrine to

be all the more flourishing; indeed, to retrieve a good deal of lost ground in popular favor.

The legislature of Massachusetts, which was the first in the world to interfere in behalf of equity under life-insurance contracts in 1858, failed in 1871 only by a disagreement between the two houses to substitute a better and more equitable law for the Act of 1861. In chartering the MASSACHUSETTS FAMILY BANK in 1876, it anticipated this decision of the Supreme Court of the United States in establishing an equitable "cash surrender value," and fixes the "surrender charge" at 6 per cent of the "insurance value" in the following section: —

SECTION 6. — The bank shall issue no policy of insurance extending beyond the age of seventy-five, and none which does not have the surrender value in cash at the end of each and every policy-year distinctly stipulated therein; and the minimum surrender value to be stipulated in every policy by the bank, payable at the end of any policy-year in its term, shall be the legal reserve, or net value of the policy at the date of surrender, as ascertained by the Combined Experience Table of Mortality, and four per cent interest, less a surrender charge of six per cent of the present value of the

future insurance to be done under the policy, if continued. And in consideration of such stipulation, and the payment, in all cases of lapse, surrender, or cancellation, of such surrender value in cash, the bank shall be wholly exempt from the obligations imposed by chapter one hundred and eighty-six of the acts of the year eighteen hundred and sixty-one.